

ABSTRACT

A rotor assembly for an electric motor includes a spoke permanent magnet rotor and a shaft connected thereto. The spoke permanent magnet rotor has an axis of rotation, permanent magnet material, and ferro-magnetic material. The permanent magnet material extends outwardly relative to the axis of rotation to form a plurality of outwardly extending spoke portions of permanent magnet material. The ferro-magnetic material is positioned adjacent to the outwardly extending spoke portions of permanent magnet material. The shaft supports the spoke permanent magnet rotor for rotation about the axis of rotation. The permanent magnet material may circumferentially surround the axis of rotation to form a center portion of permanent magnet material. Further, the axis of rotation may pass through the permanent magnet material. The spoke permanent magnet rotor may be formed using a compaction process and/or an injection molding process.

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